

### **REMARKS/ARGUMENTS**

Upon careful and complete consideration of the Office Action dated October 19, 2005, applicants have amended the claims which, when considered in conjunction with the comments herein below, are deemed to place the present application into condition for allowance. Favorable reconsideration of this application, as amended, is respectfully solicited.

The Office Action initially noted that claims 15-18 have been withdrawn from further consideration as the Examiner has upheld the previously issued restriction requirement. The amendments submitted above include the cancellation of claims 15-18. Applicants reserve the right to file a divisional application directed to the subject matter of these claims at a further date.

Claims 6-14 were objected by the Office Action under 37 C.F.R. §1.75(c), as being in improper form as a multiple dependent claim cannot depend from any other multiple dependent claim. Applicants respectfully point out that original claim 5 also falls under this objection. Applicants have amended claims 5, 6, 9 and 11-13. Applicants have also added new claims 19 through 21 to cover some of the embodiments lost in amending the multiple dependencies. As such, the new claims do not involve the addition of new subject matter. Based on the amendments referred to above, it is respectfully requested that the objection of claims 5-14 be withdrawn.

The Office Action rejected claims 1-5 under 35 U.S.C. §102(b) as being

anticipated by the English translation of WO 02/41826. Said reference is an earlier application belonging to the assignee of the present application and, as such, applicants are very familiar with said reference. The present invention, as claimed in claim 1, is directed to an aqueous colloidal gold solution comprising an aqueous medium and: gold particles in colloidal form; a compound having a polar tertiary amino group conjugated via a hydrophobic aromatic residue with a weaker alkaline group which can also be a part of the aromatic residue; and a stabilizer comprising a mercapto group (-SH) and an acidic group.

It is respectfully submitted that the technical objects of the present invention over the cited WO reference was to provide a writable and printable colloidal gold solution which, *inter alia*, uses environmentally compatible media, has a longer shelf life, results in a written or printed image having an excellent gold metallic sheen, and can be especially used in ink-jet printers.

The WO reference teaches that is possible to transfer metallic colloids from the organic into an aqueous phase by means of a specific phase transfer catalyst. The metallic colloids are exemplified by gold, silver, platinum, iridium, etc. (see page 11 of the English translation, lines 5 to 14, and page 22, fourth line under item 1 and 2, respectively). The specific phase transfer catalyst of WO 02/41826 is generically described in claim 1 of the reference. Examples of the suitable phase transfer catalyst are given on pages 22 and 23 and are 4-dimethylaminopyridine (DMAP), 11-mercaptopundecanoic acid (MUA) and mercaptopropyltrimethoxysilane.

As discussed in the present specification on pages 3-4, it is set forth that the aqueous colloidal gold solutions produced with DMAP as the phase transfer catalyst in accordance with WO 02/41826 can be used as gold inks (although this is not explicitly stated by WO 02/41826) and the resulting appearance of the writing shows a gold metallic effect. It is further stated, however, at the concentration needed for a clearer effect, the gold solutions of WO 02/41826 do not have a long shelf life.

In fact, the objects of the present invention are achieved by an aqueous colloidal gold solution comprising (a) nanoparticulate gold particles, (b) a compound having a polar tertiary amino group conjugated via a hydrophobic aromatic residue with a weaker alkaline group which can also be a part of the aromatic residue (such as DMAP), in combination with (c) a stabilizer comprising a mercapto group and an acidic group.

It is respectfully submitted that even though WO 02/41826 discloses one example of a phase transfer catalyst (MUA) fulfilling the structural requirements of the claimed stabilizer (c), it is nowhere taught, nor suggested, that DMAP and MUA are to be used in combination. That is, WO 02/41826 identifies both DMAP and MUA as possible components, however, only as alternative components. It is stressed that throughout WO 02/41826, DMAP and MUA are referred to as alternative phase transfer catalysts. For example, the Examiner's attention is respectfully directed to page 6, first paragraph, of the English translation of WO 02/41826 wherein it is explained that DMAP forms "a relatively weak type of bond". In the last paragraph of the same page, it is stated that:

Should, on the other hand, a very stable bond be wanted  
between shell molecules and nanoparticle surface after

phase transfer has occurred..., the substance is ...  
selected so that an effectively irreversible type of bond  
is obtained.... A preferred substance for this purpose is  
mercaptoundecanoic acid (MUA).

Consequently, it is respectfully submitted that WO 02/41826 does not anticipate the claimed colloidal gold solution in accordance with the present invention. That is, in view of the afore-mentioned modes of action disclosed by the cited reference, the skilled person would not have considered using DMAP and MUA in combination in the same solution. It is furthermore surprising that, despite the different bonding to the colloidal metal surface, a very stable gold ink can be obtained in accordance with the present invention. Example 1 of the present application shows for instance that a gold ink fulfilling the requirements as claimed in claim 1 is storage-stable at 55°C for at least three months.

Still further, as mentioned above, WO 02/41826 teaches that the phase transfer catalysts are suitable for various metallic colloids. Thus, it was not recognizable for a skilled person that the combined use of compound (b) of present claim 1 and stabilizer (c) would be particularly suitable for gold nanoparticles. Even further, it is seen from item 2 found on page 22 of WO 02/41826 that the use of MUA as the phase transfer catalyst led to particle agglomeration and precipitation. It is respectfully submitted that this teaching would have prevented the skilled artisan from using a compound fulfilling the requirements of stabilizer (c) as claimed for the purpose of stabilizing gold particles.

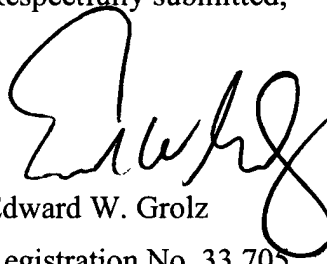
Finally, it is also noted that WO 02/41826 in Comparative Example 1 shows that replacement of 2-mercapto-ethane-sulfonic acid sodium salt in Example 1 by mercapto-

propyl-(trimethoxy)-silane (as used in item 3) neither led to a satisfactory stabilization nor a satisfactory gold sheen effect. Consequently, the reference itself is teaching that not any combination of phase transfer catalysts disclosed in the reference is suitable for the stabilization of gold inks. It therefore follows that the skilled artisan would thus not be inclined to simply combine any two of the disclosed phase transfer catalysts, let alone the specific combination of DMAP and MUA.

Based on the distinctions and arguments set forth above, it is respectfully submitted that claims 1-5 (as well as the remaining claims) are not anticipated by WO 02/41826. Accordingly, it is respectfully requested that the rejection of these claims under 35 U.S.C. §102(b) be withdrawn.

Finally, it is further submitted that all the claims in the application as presently submitted contain patentable subject matter and a Notice of Allowance is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Edward W. Grolz', with a large, stylized loop at the end.

Edward W. Grolz

Registration No. 33,705

EWG/cl